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AUTHOR Greene, A. L.
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ABSTRACT

Several writers have suggested that changes in temporal perspective during adolescence are largely a consequence of the cognitive acquisitions held to characterize the period (i.e., emergence of formal operations reasoning). To replicate earlier research, which found little association between adolescents' formal operations reasoning and future time perspective, 60 white adolescents (20 ninth graders, 20 twelfth graders, and 20 college sophomores) were interviewed. Each interview consisted of the randomized presentation of one formal operations reasoning task (the Balance Puzzle), and two future time perspective tasks (the Density of Future Events and the Future Sequence Arrangement tasks). While analysis of the relationship between grade level and future time perspective failed to obtain significance, grade level, interpreted to represent an index of socioeducational experience and context, significantly differentiated the futures envisioned by adolescents. The findings suggest that contrary to popular opinion, such factors as life span status, socioeducational experience, and context may make greater contributions to the composition of and changes in future time perspective during adolescence. (Author/JAC)

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# The Present of Things Future, Revisited ... Again [1,2]

A. L. Greene

West Virginia University

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[2] Requests for reprints should be sent to the author at the Department of Psychology, West Virginia University, P.O. Box 6040, Morgantown, West Virginia 26506-6040.

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ABSTRACT

Several writers (e.g., Cottle & Klineberg, 1974; Fraisse, 1963; Gorman & Wessman, 1977; Inhelder & Piaget, 1958; Piaget, 1968) have suggested that changes in temporal perspective during adolescence are largely a consequence of the cognitive acquisitions held to characterize the period (i.e., emergence of formal operations reasoning). In a preliminary examination of this hypothesis (Greene, 1984), this author found little association between formal operations reasoning and future time perspective, in a cross-sectional sample of 9th and 12th graders and college sophomores. In contrast, grade level, interpreted to represent an index of socioeducational experience and context, was found to significantly differentiate the futures envisioned by adolescents. The results of a replication effort, reported here, support the findings of the earlier investigation. Taken together, the findings of these two studies would suggest that contrary to popular opinion, such factors as life span status, socioeducational experience and context may make greater contributions both to the composition of and changes in future time perspective during adolescence.

## The Present of Things Future, Revisited...Again

Adolescence is commonly considered a phase of the life cycle during which youths construct a sense of the future; expanding their perspectives of time to consider future roles, events and experiences (Cottle & Klineberg, 1974; Erikson, 1968; Seton, 1974). Researchers have consistently observed an increased conciousness of time and temporal phenomena during this period; characterized primarily by an orientational shift from the immediacy of the present, and the lure of the past, to a greater concern for, and preoccupation with, future roles and experiences (Cottle, 1976; Cottle & Klineberg, 1974; Moerk, 1974; Moerk & Becker, 1971; Montemayer & Eisen, 1977).

Moreover, this shift appears to incorporate an appreciation for the interconnectedness of past, present and future. As Cottle (1977) suggests, there develops a concomittant sense of historicity -- a heightened appreciation for the influence of past experience upon both present and future events (Cottle & Klineberg, 1974; Erikson, 1964; Fraisse, 1963).

Taken together, the findings of this literature would suggest that adolescents, as compared to young children: (1) demonstrate greater depth and extension of temporal perspective (Kastenbaum, 1961; 1966; Wallace, 1956; Verstraaten, 1981); (2) project a more complex and differentiated set of future expectations (Bortner & Hultsch, 1972; Douvan & Adelson, 1966; Moerk & Becker, 1971); and (3) describe future aspirations and expectations with a greater degree of planfulness, organization and realism (Lens & Gailly, 1980; Moerk, 1974; Verstraaten, 1980).

In the main, researchers have attributed these changes in

temporal perspective during adolescence to the acquisition of new cognitive functions, albeit variously described. Thus, for Hartmann (1958), adolescent future time perspective evidences acquisition of a new level of ego functioning. The interpretation of changes in adolescent temporal perspective as evidentiary of new ego functions is a common theme in the clinical literature, as evidenced by the writings of Erikson (1968), Winnicott (1965) and Freud (1953). In this perspective, expansions in adolescent temporal perspective are seen as healthy avoidance of pscyhogenic fragmentation and psychopathology.

In contrast, Piaget (Inhelder & Piaget, 1958; Piaget, 1968; 1971) emphasizes a different cognitive catalyst underlying the expansion of temporal perspective during adolescence. For Piaget (Inhelder & Piaget, 1958), it is the emergence of formal operations reasoning, the final stage of cognitive development, which generates the adolescent's new ability to envision and project distal future events and experience.

The extent to which Piaget's assumption has been both accepted and forwarded within the literature concerning future time perspective cannot be overemphasized. Despite a notable lack of empirical support, this conceptualization has been widely referenced to account for the changes in temporal perspective observed to occur during adolescence (e.g., Fraisse, 1963; Riegal, 1977; Wessman & Gorman, 1977). The happenstance is not surprising, as the formulation has a certain intuitive appeal.

However, in a preliminary examination of this hypothesis, this author (Greene, 1983) found that formal operations reasoning was

largely unrelated either to the dimensions characterizing adolescent future time perspective (i.e., the number of future events projected; the oldest or median ages for the future events anticipated), or the types of future events described. Rather, grade level -- interpreted to represent differences in life span status and contextual experience -- was found to ificantly differentiate both the degree of extension and kinds of futures anticipated by a cross-sectional sample of 9th and 12th graders, and college sophomores. The present paper reports the findings of a replication effort, using comparable groups of 9th and 12th graders, and college sophomores, which was designed to re-examine the relationship between cognition and future time perspective.

## METHOD

### Sample

The sample consisted of sixty caucasian adolescents, stratified by grade level and sex: Ten male and ten female ninth graders; ten male and ten female twelfth graders; and ten male and ten female college sophomores. High school students were selected randomly from the ninth and twelfth grade classes of the local secondary school. College sophomores were recruited from a volunteer pool of students enrolled in an introductory human development class at the local university.

### Procedure

Data was obtained through half hour individual interviews conducted with each student. Each interview consisted of the randomized presentation of one formal operations reasoning, and two future time perspective tasks.

The Balance Puzzle, developed by Pulos and Linn (1980) was used to measure formal operations reasoning. The Balance Puzzle is a 13 item paper and pencil task. Each item was presented with a corresponding drawing of a balance beam, which depicted two disparate weights located at specific distances from the fulcrum or center of the balance. Students were asked to select from a set of four choices, the combination of weights and weight placement (i.e., variable distances from the fulcrum) which would bring the beam into equilibrium.

Two tasks were used to measure future time pective: The Density of Future Events (D-1), and the Future Sequence Arrangement tasks (Kastenbaum, 1961). The Density of Future Events (D-1) task is an open-ended interview in which the student is asked to list all of the possible events which may happen in the future. Students were allowed to identify as many events as they so chose. Once a set of future events was obtained, the student was asked to identify the age at which each event was most likely to occur. Three measures, or dimensions, of future time perspective were abstracted from the data obtained with this task: (1) <u>density</u>, or the absolute number of future events identified; (2) <u>spontaneous extension</u>, or the oldest age at which an event was projected to occur; and (3) <u>constrained extension</u>, or the median age for the set of future events identified.

The Future Sequence Arrangement is a structured parallel forms task, consisting of two forms. In Form A of the task, students were read a list of twelve possible future events, and asked to identify the age at which each event was most likely to occur. In Form B, students were given 12 cards, each card listing one of the events that

had been presented in Form A. Students were asked to order the cards, corresponding to the probable chronological occurence of the events listed. That is, to order the cards so that the event most likely to occur first was the first card, the event most likely to occur second was the second card, and so on. For scoring purposes, separate ranks were assigned to each event, within each form of the task, corresponding to the student's ordering of events within that form. Thus, for each student, two sets of rankings were obtained the 12 events, one for each form of the task. Spearman Rank Order Correlation coefficients were computed between the two sets of rankings to determine the degree of consistency students demonstrated in their anticipation of future events. That coefficient was used as the fourth measure of future time perspective -- consistency.

## RESULTS AND DISCUSSION

Table 1 presents the mean and median future time perspective scores obtained in the two studies, for each of the three grade level groups. In this and subsequent tables, data from the first study (i.e., Study I) are presented in parentheses for comparative

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Insert Table 1 About Here

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purposes. As can be seen, analysis of the relationship between grade level and future time perspective failed to obtain significance. In contrast to the findings of the Study I, spontaneous extension was not significantly related to grade level. Nor were older adolescents better able than their younger counterparts to project a greater number, a more extended or a more consistent set of future events.

Table 2 presents the bivariate correlation coefficients

obtained between the measures of future time perspective and formal operations reasoning. As before, future time perspective was found to be largely independent of formal operations reasoning. In the present investigation, unlike

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Insert Table 2 About Here

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Study I, constrained extension (or the median age for the set of events nominated) failed to obtain significance.

In the final examination of these data, we wished to determine the kinds oture events anticipated by these adolescents, and whether the type of event foreseen was related to cognition or grade level. As in Study I, four mutually exclusive categories were abstracted from the set of events described by the sample.

Based on the apparent themes represented by the events described, the four categories were as follows:

Achievement. Events which represented the attainment of some goal, status or privilege (e.g., having success in one's career). Thirty percent of the events identified fell into this category for Study II as opposed to 33% for Study I.

Relational events. Events which focussed on some aspect of the adolescent's future interpersonal relationships (e.g., marriage, having a family). Forty percent of the events identified in Study II fell into this category as opposed to 36% of the events in Study I.

Experiential events. Events whfch focussed upon the occurence of some (new) experience, or change in lifestyle, external to the adolescent (e.g., travel, move to a new city). Fifteen percent of

future evetns identified in Study II fell into this category as opposed to 18% for Study I.

Existential events. Events which focussed upon some change in the adolescent's inner state-of-being (e.g., contentment, wisdom). Fifteen percent of the events identified in Study II fell into this category as opposed to 11% for Study I. Each event was coded as representing one of the four future event categories. Inter-rater reliability was computed to be .89. Frequency analyses then were conducted to determine whether the distribution of future event categories differed by grade or cognitive level. These results are presented in Tables 3 and 4, respectively.

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Insert Table 3 About Here

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Insert Table 4 About Here

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As can be seen in Study I and in Study II no significant differences were found for cognition. However, significant effects for grade level were obtained in both studies. Interestingly, several different patterns in the distribution of future event categories appear to be giving rise to this result. First, younger adolescents appear to anticipate the occurence of experiential future events to a significantly greater extent than do older adolescents. They also appear to have a greater concern for the occurence of future peer relationships. Second, among the older adolescents, there appears to be a gradual shift towards greater anticipation of internal as opposed

to external experiences. Finally, twelfth graders, as compared to either high school or college sophomores, appear to have a greater concern for future achievements.

The results obtained in these two studies provide little support for Piaget's formulation concerning the role of formal operations reasoning in the expansion of future time perspective during adolescence. In contrast to Piaget's suggestion, these data would suggest that whatever contributions to future time perspective that are made by cognition, are overshadowed by the greater influence of grade level. We may, as Haan (1982) has suggested, interpret the obtained grade level differences to represent an index of the experiences (e.g., social, educational) that the adolescent has, and continues to accumulate. That is, what may distinguish the three groups in these two studies is not so much the age levels specific to each, but rather differences in context, and the concomitant experiences encountered therein. We gain some appreciation for this suggestion if we consider, mecdoctally, some of the experiences and concerns which differentiated the groups in these two studies.

In both studies, data was collected during the fall semester of the school year, shortly after the opening of school. In both studies, ninth graders experienced changes not only in school location, but also in school structure, class size and composition, and peer relationships. To a large extent, the kinds of experiences encountered by these students in the present are reflected in the kinds of events which they anticipate in the future (i.e., externally focussed and interpersonally defined). Similarly, the greater frequency of achievement events identified by twelfth graders may be

reflective of their specific concerns at that point in time (e.g., college, job market entry). By contrast, college sophomores, perhaps having achieved the high school seniors' started goals, display greater balance in the projection of relational vs.ievement, and experiential vs. existential events. What these differing patterns suggest is that adolescents may expand and construct the stuff of their futures not so much as a consequence of cognitive factors (as Piaget and others have suggested), but rather as a result of the social and educational experiences which they have accumulated, and the contexts in which they function.

In this manner, adolescent temporal perspective bears striking resemblance to the personal narrative described by Ricoeur (1979). That is, the apperception of self in different time periods (past, present and future) can be seen to correspond to the lineaments of a story. To maintain congruency of self, then, the various frames of the narrative (i.e., past, present and future) also must be congruent. Cohler (1980; 1982) uses the construct to provide a framework within which adult recollections of early experience can be understood. He suggests that emphasis should be placed upon the degree of cosanguinity between past memories and present experience and self perceptions, and <u>not</u> upon the accuracy of such memories <u>per se</u>. Adults, Cohler argues, may unconciously reconstruct memories of past experience so as to achieve cosanguinity. Thus, the present "flows" from the past, and the personal narrative obtains congruence.

In the present study, it appears that the opposing end of this personal narrative continuum may hold. Adolescents in these two studies appear to project into the future the kinds of events which

they encounter in the present, and which, perhaps, they have experienced in the past. In other words, students appear to construct a future narrative that is congruent with present (and accumulated) experience, and, possibly, self-perception.

In summary, the fins of these studies would suggest that use of a cognitive hypothesis to explain expansions in adolescent future time perspective is limited at best. Rather, a confluence of experiential contextual and self-referential factors appear to influence both the degree of extension, and the kinds of futures envisioned.

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Table 1

Mean and Median Future Time Perspecitve Scores by Grade Level Group for Study I and Study II

| Future Time Perspective | Ninth | Twelfth | College Sophomore | p |
|---|---|---|---|---|
| Mean Density Score (years) | 9.5 | 8.3 | 9.8 | n.s. |
| | (7.8) | (6.5) | (7.3) | (n.s.) |
| Mean Spontaneous Extension | 49.73 | 53.25 | 54.26 | (n.s.) |
| Score (years) | (50.70) | (49.85) | (57.20) | (.05) |
| Median Constrained Extension | 26.75 | 24.25 | 28.75 | n.s. |
| Score (years) | (25.25) | (26.75) | (29.75) | (n.s.) |
| Mean Consitency Score | .70 | .73 | .66 | n.s. |
| | (.76) | (.80) | (.83) | (n.s.) |

Table 2

Product Moment Correlations Between Measures of Future Time Perspective and Formal Operations Reasoning for Study I and Study II

| Future Time Perspective | Pearson Coefficients |
|---|---|
| Density | .10 (-0.05) |
| Spontaneous Extension | .05 (0.14) |
| Constrained Extension | .15 (0.28)* |
| Consistency | .14 (-0.03) |

*p < .05

Table 3

Future Event Categories by Cognitive Level

For Study I and Study II

(Percent Response)

| Event Categories | Substage IIB | Substage IIB/IIIA | Substage IIA | Substage IIIB |
|---|---|---|---|---|
| Experiences | 10 (16) | 40 (28) | 22 (21) | 16 (14) |
| Relationships | 46 (44) | 27 (35) | 31 (35) | 35 (36) |
| Achievements | 32 (28) | 27 (29) | 37 (35) | 35 (33) |
| Existential | 12 (12) | 6 (8) | 10 (9) | 14 (17) |
| | 100 (100) | 100 (100) | 100 (100) | 100 (100) |

$X^2 = 6.70$. df = 9, n.s.

Tab'e 4

Future Event Categories by Grade Level

For Study I and Study II

(Percent Resse)

| Event Categories | Ninth | Twelfth | College Sophomore |
|---|---|---|---|
| Experiences | 45 (32) | 15 (19) | 13 (14) |
| Relationships | 38 (42) | 33 (31) | 32 (36) |
| Achievements | 15 (21) | 48 (45) | 32 (31) |
| Existential | 2 (5) | 4 (5) | 23 (19) |
| | 100 (100) | 100 (100) | 100 (100) |

$X^2 = 23.35$, df = 6, $p < .001$, C = .30